

**Application No.: 10/667,513****Docket No.: 4459-131****AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) An impedance standard substrate for calibrating a vector network analyzer, the vector network analyzer including two probes, said impedance standard substrate comprising:

a first surface;

a second surface opposite to the first surface; [[and]]

a thru-circuit having two contacts electrically connected to each other and respectively disposed on the first surface and the second surface, wherein the contacts are adapted to electrically connect to the two probes of the vector network analyzer, respectively; and

at least one of (a) a pair of open-circuits, (b) a pair of short-circuits, and (c) a pair of load-circuits which are disposed on the first surface and the second surface, respectively.

2. (original) The impedance standard substrate as claimed in claim 1, wherein the substrate comprises a via electrically connected to the two contacts.

3. (original) The impedance standard substrate as claimed in claim 2, wherein the two contacts are disposed by the opposite sides of the via, respectively.

4. (original) The impedance standard substrate as claimed in claim 2, wherein the two contacts are disposed by the same side of the via.

**Application No.: 10/667,513****Docket No.: 4459-131**

5. (original) The impedance standard substrate as claimed in claim 1, further comprising a side wall defined between the first surface and the second surface, wherein the two contacts of the thru-circuit abut the edge of the impedance standard substrate and the thru-circuit further comprises a trace disposed on the side wall for electrically connecting the two contacts.

6. (original) The impedance standard substrate as claimed in claim 5, wherein the trace is disposed by circuit layout on the side wall.

7-9. (canceled)

10. (currently amended) A method for calibrating a vector network analyzer, which generates a measuring signal and comprises two probes for transmitting the measuring signal, comprising the steps of:

providing an impedance standard substrate which has a first surface and a second surface opposite to the first surface;

providing a thru-circuit having two contacts electrically connected to each other and respectively disposed on the first surface and the second surface; and

driving the two probes to be in contact with the two contacts, respectively, and sending the measuring signal;

said method further comprising

providing at least one of (a) a pair of open-circuits, (b) a pair of short-circuits, and (c) a pair of load-circuits which are disposed on the first surface and the second surface, respectively; and

driving the two probes to be in contact with said at least one of the pair of open-circuits, the pair of short-circuits, and the pair of load-circuits, respectively, and sending the measuring signal.

11-13. (canceled)

**Application No.: 10/667,513****Docket No.: 4459-131**

14. (original) The method as claimed in claim 10, wherein the thru-circuit comprises a via electrically connected to the two contacts.

15. (original) The method as claimed in claim 10, wherein the impedance standard substrate further comprises a side wall between the first surface and the second surface, the contacts of the thru-circuit abut the edge of the impedance standard substrate, and the thru-circuit further comprises a trace disposed on the side wall for electrically connecting the two contacts.

16-21. (canceled)

22. (previously presented) The impedance standard substrate of claim 1, wherein the two contacts are exposed on the first and second surfaces, respectively, whereby allowing the two probes of the vector network analyzer to come into direct, electrical and physical contact with the two contacts of the substrate, respectively.

23. (previously presented) The method of claim 10, wherein, in said step of driving the two probes, each of the two probes of the vector network analyzer is brought in direct, electrical and physical contact with one of the two contacts of the substrate.

24. (previously presented) The method of claim 23, wherein said step of providing the thru-circuit comprising exposing the two contacts of the substrate on the first and second surfaces, respectively, for allowing direct, electrical and physical contact between each of the two probes of the vector network analyzer with one of the two contacts of the substrate.

25. (previously presented) The method of claim 23, wherein, in said step of driving the two probes, the two probes of the vector network analyzer are simultaneously brought in direct, electrical and physical contact with the respective two contacts of the substrate.